

AMENDMENTS TO THE CLAIMS

1. (currently amended) A method for compression of sonic log data, comprising:
 sorting peak components in a STC plane to transform high-frequency information in the
 peak components to low frequency the sonic log data; and
 ~~filtering the sorted peak components to remove high-frequency portions in the peak~~
 ~~components; and~~
 decimating the ~~filtered~~ sorted peak components according to a selected ratio to produce
 compressed data.
2. (original) The method of claim 1, wherein sorting the peak components comprises sorting for
 compressive wave (P-wave), shear wave (S-wave), and Stoneley wave (St-wave)
 components.
3. (original) The method of claim 2, wherein sorting comprises sorting for the P-wave
 component, the S-wave component, and the St-wave component in a sequential order.
4. (original) The method of claim 1, wherein sorting involves rules based on expected slowness
 ranges for the peak components.
5. (original) The method of claim 1, wherein sorting the peak components comprises correcting
 peak spikes due to noise in the sonic log data.
6. (currently amended) The method of claim 1, wherein the sorting comprises filtering the
 sorted peak components using[[es]] a low pass filter.
7. (original) The method of claim 6, wherein the low pass filter is selected to cut off a top 75%
 frequency in the sorted peak components.
8. (original) The method of claim 7, wherein the selected ratio is four to one.
9. (currently amended) The method of claim [[1]]6, wherein the sorting, the filtering, and the
 decimating are performed in a downhole tool.

10. (original) The method of claim 9, further comprising sending the compressed data uphole via telemetry.
11. (original) The method of claim 10, wherein sending the compressed data uphole comprises encoding the compressed data.
12. (original) The method of claim 9, wherein the telemetry comprises mud telemetry.
13. (currently amended) A method for telemetry transmission of downhole sonic log data, comprising:
 - sorting peak components in a STC plane to transform high-frequency information in the peak components to low frequency the sonic log data;
 - compressing the sorted peak components to produce compressed data;
 - packing the compressed data to produce data packets for telemetry transmission; and
 - sending the data packets where desired using telemetry.
14. (original) The method of claim 13, wherein sorting the peak components comprises sorting for compressive wave (P-wave), shear wave (S-wave), and Stoneley wave (St-wave) components.
15. (original) The method of claim 14, wherein sorting comprises sorting for the P-wave component, the S-wave component, and the St-wave component in sequential order.
16. (original) The method of claim 13, wherein sorting involves rules based on expected slowness ranges for the peak components.
17. (original) The method of claim 13, wherein sorting the peak components comprises correcting peak spikes due to noise in the sonic log data.
18. (original) The method of claim 13, wherein compressing comprises:
 - filtering the sorted peak components using a low pass filter; and
 - decimating the filtered sorted peak components according to a selected ratio.

19. (original) The method of claim 18, wherein the low pass filter is selected to cut off a top 75% frequency in the sorted peak components.
20. (original) The method of claim 19, wherein the selected ratio is four to one.
21. (original) The method of claim 13, further comprising unpacking the data packets to regenerate the compressed data; and decompressing the regenerated compressed data to reconstruct the peak components.
22. (original) The method of claim 21, wherein decompressing comprises interpolating the regenerated compressed data.
23. (currently amended) A system for compressing sonic log data, comprising a processor and memory means, wherein the memory stores a program having instructions for:
 sorting peak components in a STC plane to transform high-frequency information in the
 peak components to low frequency the sonic log data; and
 ~~filtering the sorted peak components to remove high frequency portions in the peak~~
 ~~components; and~~
 decimating the ~~filtered~~ sorted peak components according to a selected ratio to produce compressed data.
24. (original) The system of claim 23, wherein sorting the peak components comprises sorting for compressive wave (P-wave), shear wave (S-wave), and Stoneley wave (St-wave) components.
25. (original) The system of claim 24, wherein sorting comprises sorting for the P-wave component, the S-wave component, and the St-wave component in sequential order.
26. (original) The system of claim 23, wherein sorting involves rules based on expected slowness ranges for the peak components.
27. (original) The method of claim 23, wherein sorting the peak components comprises correcting peak spikes due to noise in the data.

28. (currently amended) The system of claim 23, wherein the sorting comprises filtering the sorted peak components using[[es]] a low pass filter.
29. (original) The system of claim 28, wherein the low pass filter is selected to cut off a top 75% frequency in the sorted peak components.
30. (original) The system of claim 29, wherein the selected ratio is four to one.